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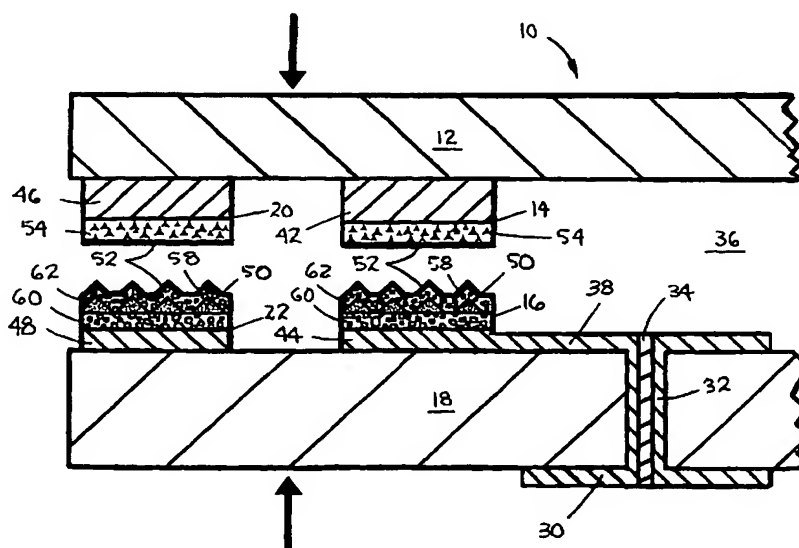
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(54) Title: FLUXLESS ASSEMBLY OF CHIP SIZE SEMICONDUCTOR PACKAGES



(57) Abstract: A method for assembling semiconductor packages (10) includes forming corresponding pairs of conductive pads (14, 16, 20, 22) on respective surfaces of a die (12) and an interconnect substrate (18). Each pad in each pair includes an upper portion comprising at least one component of an electrically conductive eutectic alloy. Sharp, upstanding peaks (50, 58) are formed on at least one of the pads in each pair. The die and substrate are forcefully abutted and the pads heated until the sharp peaks penetrate through oxide films (52) on the respective opposing pads in each pair and contact the upper surface of the other pad therein, thereby initiating pad fusion. The pads are then cooled to solidify the molten portions thereof into an electrically conductive joint between each corresponding pair of pads and a hermetic seal around the periphery of the package.